Examination.—Temperature 101°. Increased surface temperature of this mastoid. Tenderness of the whole of the mastoid and particularly over the tip. A bulging of the posterior superior wall. A small perforation in front and below. Advised immediate operation because of the duration of the disease with bulging of the posterior superior wall and increase of surface temperature, added to the sensitiveness on pressure. Operation recommended and done on the following day.

Findings.—After a free paracentesis, the operation was done in the usual way. Large pneumatic mastoid. Each individual cell as well as the antrum was filled with edematous membrane. I called this edematous mucous membrane. I do not know a better name for it. As the individual cells were cut across, this mucous membrane or possibly granulation tissue would bulge from the cavity. Pus was not found in the cells, but was found in the antrum. My explanation of this pathological condition is that the inflammation had begun to subside. No doubt all these cavities were primarily infected to produce the condition spoken of. However, I am of the opinion that had the operation not been done she would have had a brain infection. The discharge from her ear had entirely ceased at her first dressing. The posterior wound had healed in four weeks. Hearing impaired because of long duration of discharge.

Case 6. Child 6 years old. Has had pain in her ear off and on for the last week. Considerable tenderness over the mastoid. Temperature 101°. Pulse 120. No increased surface temperature. The pain at night is so intense she cannot sleep. Relieved by hot applications.

Ear Examination.—A bulging of the posterior superior wall which extends into the drum membrane. The drum membrane is very red. A free paracentesis was advised and done, and the same treatment carried out that I have recommended before. The following day the temperature had dropped to normal, there was not so much tenderness over the mastoid. A hot compress and hot tampons were again applied. The patient resting very comfortably during the day and night complaining of no pain whatever. The third or fourth day following the paracentesis a bulging appeared in the posterior superior wall. Temperature 101°. Pulse 120. Did not complain of pain. However I recommended operation. Done the same day. I again incised the drum membrane and did the operation in the usual manner. A pneumatic mastoid. The mucous membrane of each cell was so inflamed that it completely filled the cell. I did not encounter pus until I got into the antrum. The mucous membrane at this place had the same appearance as that of the cells, besides it was bathed in pus. The ear was dry about ten days after the operation. The posterior wound closed in three weeks. Following the operation she continued to have some pain in the mastoid region and some temperature. The only way that I can account for this is that I overlooked an individual cell that went on to the formation of pus, breaking its way through to the operative field, or because of the virulence of the infection which was improved by the application of a bi-chloride dressing. Otherwise this case made an uneventful recovery.

Case 7. Referred by Dr. H. C. Moffit: Infectious sinus thrombosis from delayed operative interference, in a case of mastoditis of four months' duration. Reported in full in "California State Journal of Medicine." This case illustrates very beautifully the cerebral complications that are sure to follow if not operated. Made complete recovery.

Case 8. Clinical case: Fracture of base of skull followed by acute purulent otitis, mastoiditis, infectious sinus thrombosis. Four weeks since accident. Recovery. This case again illustrates very beautifully the importance of early operative interference, especially when associated with fracture of the base. Reported in full in the "California State Journal of Medicine."

In conclusion I wish to say that the bulging of the posterior superior wall of the meatus is almost a constant factor with pus retention. That more significance should be directed to this purulent condition. That the absence of fever and pain must not be taken into consideration when you have a bulging of the posterior superior wall. That the presence of fever and pain without bulging of the posterior superior wall must be indications sufficient to warrant operation especially when coming on late.

In a series of twenty-seven cases, hearing was impaired in two due to delayed operation. Hearing unimpaired in the balance. All the cases are absolutely well.

The longest duration for closure of the posterior wound was six weeks in two cases. The shortest ten days. The longest duration for pus from the meatus was four weeks in one case, the shortest my first dressing. The average about six or ten days.

All the cerebral complications developed from delayed operative interference.

If you follow my suggestions you may do an occasional unnecessary operation, but I am confident that your patient will not die of cerebral complications.

I do not mind repeating a statement I made at the Ear Section of the American Medical Association, June, 1907. Acute cases of mastoiditis should never terminate fatally, and I am confident they will not if they are operated soon enough.

DISCUSSION OF THE SYMPOSIUM ON OTITIS MEDIA.

Dr. A. C. Rogers, Los Angeles: So far the subject has been gone into very extensively and very satisfactorily. The gentlemen who have read the papers have passed over one point and another in the most satisfactory manner, and I feel entirely incompetent to add anything except this one thing: I believe we should urge upon our brother practitioners, the men who are doing the practice of medicine in their respective localities, that they should form and follow this invariable rule, that every sick child presenting the common symptoms of fever, and pain, or restlessness, or unconsciousness, should have a careful examination of the external ear.

Dr. E. W. Fleming, Los Angeles: The time allotted for discussion is so short that it would be impossible to cover all the points brought up by Dr. Hastings in his most comprehensive and interesting paper. I am on the program to discuss his paper and therefore mention it particularly. I shall touch only briefly upon a few of the points dwelt upon by the essayists. If all cases of mastoiditis following acute otitis media coming to us for an opinion corresponded to that class in which all the classical inflammatory manifestations, both at the fundus of the ear and in the mastoid region, are present, the duty of the surgeon is plain. Recovery, however, even in this type of cases has occurred in my practice in patients who refused operative interference of any kind. Two types of mastoiditis frequently met with are, first, those cases where the manifestations of inflammation in the mastoid bone are especially pronounced—while the drum membrane and deeper canal appearances are at no time well defined—and

second, cases where the very opposite conditions prevail. Another and quite the most difficult class of cases are those which show little or no adequate local or systemic manifestations to help us to determine the true condition of the patient. These cases where the indications for operative interference are not well defined must be studied from day to day in their minutest detail. Here the keen appreciation of the personal judgment of the surgeon that comes from an adequate clinical experience is, to my mind, the most important factor in determining whether or not the patient should be operated upon. A laboratory diagnosis may be very helpful. It should be made by one whose technic is free from error, else it may be worse than useless. It is exceedingly important to constantly keep in mind that intracranial complications of purulent otitis media may occur other than by way of the mastoid cells. As, for instance, the tegmen tympani—or it may be by way of the circulation. As good drainage is essential to the prompt cure of an acute otitis media, an early mastoid operation, even in doubtful cases, has the advantage of checking further destruction by the disease of the middle ear structures by establishing posterior drainage, and at the same time permits the surgeon to make sure of his ground from the viewpoint of the mastoid cavity. Having had several disagreeable experiences in cases of brain, meningeal and sinus involvement following acute suppuration of the middle ear with associated mastoiditis, without mastoid symptoms, I am strongly disposed to agree with Whiting, Jackson and others, who contend for early, and, it may be, unnecessary operation, rather than assume the responsibility of a possible development of a dangerous complication as the result of an over conservative attitude.

Dr. Edw. Gray, Eldridge: The first case of mastoid disease which I ever saw was in the year 1875. At that time you are aware the state of medical education was quite different from what it now is; and it was because of the occurrence and the presenting before me of a case of fatal mastoid disease in the person of a girl 16 years of age, taken into the hospital, and the evident helplessness of the hospital force in fighting it that led me to go to the city of Vienna and there study diseases of the ear, nose and throat. I will not worry you with the history of that case, suffice it to say that it was a case of neglected ear-disease following measles in childhood. The otorrhea had been running on for a period of perhaps ten years, and I at the time was senior assistant in the Presbyterian Hospital in the city of New York, and I was sent down to the tenement district to examine this case to see if it were a proper one to enter the hospital, because evidently the suspicion of the authorities was that it might be a case of cerebro-spinal meningitis. The symptoms were cerebral. The girl was taken into the hospital and after a variable history over something like ten days finally died with symptoms that resembled apoplexy more than anything else. A post mortem was secured. The tegmen tympani was thoroughly disorganized, blackened, and the orifice through which the pus, etc., had made its way was clearly defined, and the portion of the cerebral meninges which had thereby been irritated and formed an abscess of the brain was clearly demarcated.

After returning from Vienna and coming back to this, my native, state and entering into practice it was a long time before I encountered another case. I refer to this because it was a singular case. There has not been a single reference in all that has been said this afternoon to the conditions that case presented. It was evidently a case of acute purulent otitis media, with mastoid complications. At the time I was called it was only because the patient had been under the care of another practitioner who was, by the way, a medical officer in the United States army, and I am sorry to say he was one of the very infrequent class in the army who sometimes went off on a spree, and because he was incapacitated I was called. I found the patient was treated simply for neuralgia for something like three weeks, and yet it was a case of acute mastoiditis, which any one who knew the symptoms could recognize. I immediately explained to the family the necessity of operation, and how much more difficult that was in those days. Of course they wanted consultation. The consultant was friendly and told them they were losing valuable time. He told me, "I don't know anything about it. If you do, go ahead." I went ahead and removed some fifty minims or more of pus and the patient recovered with no untoward symptoms so far as hearing was concerned, but with the complication of an abscess burrowing down the sterno-mastoid. The patient finally recovered and is alive to-day. He has said to me that that was the worst thing I ever did for him, for he ought to have been allowed to die, and the community thought so, too.

Chairman Roberts: Where did you open, doctor, the mastoid?

Dr. Gray: Yes, sir, the mastoid, with a drill.

Dr. Geo. A. Hare, Fresno: I have been exceedingly interested in the papers presented to us, and was particularly impressed by some of the thoughts in the last paper read. I want to compliment the doctor in presenting his paper in so succinct a manner and on the force and logic with which he summed up his thoughts. I wish to criticize in the most friendly manner. I am not in this line of work, but in my earlier years I was in throat and ear work. I speak from the standpoint of the general practitioner to-day, and it is therefore with some diffidence that I make the suggestion as to the use of cold. I hardly agree with the essayist as to the use of cold, that it masks the symptoms and causes paralysis, or at least a measure of benumbing of the tissues to such a degree as to often give us untoward results, but I believe that will invariably be obviated if the cold is used as it ought to be used, and I wish to make that point with emphasis. If a cold application is placed upon any inflamed surface we control that inflammation, I believe, better than by any other temporizing method. But if it is permitted to remain long enough will cause a vaso-motor paralysis and will increase the very thing we are trying to decrease. I believe it does effect all the deeper tissues of the body. The blood supply is controlled by conditions affecting the cutaneous surface. You place heat upon the surface and the blood supply to the deeper tissues will be increased, and if you apply cold the blood supply to the deeper tissues will be diminished. But if that cold is maintained the blood vessels are paralyzed and you get a hyperemia that you do not want. I invariably follow the rule either in an appendicitis or a mastoid complication, where beginning inflammation occurs, if I can have access to cold, keep it on forty or fifty minutes and then apply a hot compress for five minutes, renew the cold again, and thus maintain the sensibility of the skin permanently, and I can do more by cold than by any other means I have ever seen in the control of inflammation. I have no hesitation in advocating it very strenuously, and commend it to you, for I believe we often neglect the most conservative method of treatment at our disposal because we get these untoward results which can be obviated.

Dr. F. L. Rogers, Long Beach: I wish to refer briefly to a phase of the etiology of acute inflammation of the middle ear, which has been touched upon by two or three of the papers read, i. e., that adenoid growths are a frequent, perhaps the most frequent cause either directly or indirectly, of acute otitis media in children, and to emphasize what has

been said relative to their early removal. When I was a student the teaching was, that the operation should be postponed until the child had reached seven or eight years of age, in order to give nature a chance to "absorb the growths." But when I had a little experience of my own, I found as others have, that once the third tonsil is hypertrophied in a vast majority of cases, it remains so, and the sooner the obstruction is removed the better for the child. And the age of the child cuts little or no figure. These children are nearly all anemic and badly nourished and if they live to reach school age are found markedly below par in mental and physical development. They are mouth breathers, and from disuse the nasal passages and dental arch fail to expand normally. This leaves the child more or less permanently crippled and deformed and unless the postnasal obstructions are removed early in the developmental period of his life these deformities remain a permanent handicap. The adenoid operation, if properly performed, is a bloody and shocking procedure, and in my opinion is rarely done with thoroughness unless under a general anesthetic. I regard the operation without general anesthesia both dangerous and barbarous, and rarely thoroughly executed when undertaken in that way. To do the operation well, considerable skill and great care is necessary, and a digital examination of the field of operation should always be made after the curettement. Particularly would I call attention to the difficulty of reaching Rosemueller's fossae and the field around about the orifices of the eustachian tubes and the lateral walls of the pharynx, with the Gottstein curette. For this supplemental work I have found a good instrument in the curette devised by Byington of Battle Creek, and made by F. A. Hardy & Co., with a long slender loop blade and a double cutting edge, placed horizontally. I never consider an operation complete until I use my long straight-handled curette through the nose, my finger at the same time in the naso-pharynx as a guide to remove any small excrescences on the lateral walls of the posterior nares, or small vegetations on the turbinates. In fifteen years I do not remember to have had to operate the second time on a case where these precautions were all taken and a general anesthetic was used.

Dr. Joseph Jackson, Pasadena: I want to call attention again to the point of using heat and cold for stopping inflammation. Isn't the reason for using either to stop a bacterial growth, and cause a temperature of such a degree that the bacteria can not develop? Isn't it more that than a greater or less blood supply to the part? I like cold in the beginning of inflammatory processes, and use it for that reason, that the streptococci or staphylococci, or whatever the organism present may be, cannot develop except at a certain temperature. Then again, if the vessels be paralyzed, isn't paralysis equally favored by heat and cold? Then again, is paralysis of the vessels objectionable? Do we not wish to cause or favor a hyperemia? Doesn't the hyperemia help to remove the lesion produced by bacterial action? Isn't the checking of the growth of bacteria the main indication for using either heat or cold?

Dr. K. Pischel, San Francisco: It has been pointed out before that the family physician should examine or have examined a child's ear in every case of fever where we can not find any other explanation. In this connection I wish to call attention to a symptom which Sanford Blum called attention to last year. It has been mentioned in some of the text-books, but has not been brought generally to our attention. It is the sensitiveness to pressure behind the jaw. When examining a baby you can easily try it. While I perfectly agree that we should make microscopic examinations of the discharge from the ear, I do not think we are far enough advanced to decide about the seriousness of the infection. We find frequently that streptococcus infection leads to serious troubles, while a pure streptococcus infection may after paracentesis pass off after a day or so.

As to the closing sentence of the last essayist, "Few cases of acute mastoditis should have the operation fail, and I am confident they will not if operated on early enough," I take exception to that statement. I think there are acute infections which go so quickly that we can not possibly make the diagnosis quick enough—that a general infection takes place too quickly. Secondly, "In mastoid work a competent person can only do good, and never do harm," which was stated at the reading of the same paper in San Francisco the other day. I will have to take exception to that, too. We can do harm. Even the competent surgeon can do harm. In mastoid work we have to resort to general anesthesia, and there is no doubt in my mind that we have many deaths after a general anesthesia which formerly we did not account for. The last few years a number of cases have been reported of death three, four or five days after general anesthesia. That can happen in mastoid as well as in abdominal work, and I am sorry to say I have had some experience about it.

A Member: I should like to ask whether with chloroform or with ether?

Dr. Pischel: According to a paper read by a Chicagoan, Dr. Bevan, if I am not mistaken, at the Portland meeting, chloroform is the more dangerous, but ether can cause acute affections of the kidney three or four days afterward.

A Member: I am asking whether your experience was with chloroform or with ether?

Dr. Pischel: Happily, I have had but one case with chloroform, but according to Bevan with ether such unfortunate effects can happen.

Dr. H. G. Thomas, Oakland: I think, going back to the root of the matter, too much stress can not be laid on the diagnosis of adenoids in infants. This is not done often enough. The specialists do not see them frequently. The general practitioners do not look for them. I have been taught by the specialists to do it. We can only agree and lay emphasis on the fact that every case of snuffles we see is dead sure adenoids, in infants. Dr. Stephens has brought out a lack of air as the cause. If you will go back to your obstetric days you will remember the stuffy room, with the lack of fresh air and the swaddling of the child in heavy wraps, and completely covering it from the air, and the development of adenoids after birth is perhaps due to lack of air rather than to the food.

Coming down to the last paper, it is good to have something to kick at. We all take issue with Dr. Welty in the matter of cold. My friends the specialists, as well as the general practitioners, will all agree that in acute otitis media beginning with the earache thousands of cases have been aborted by cold. My custom is to put on the bag or coil, keep it on thirty minutes and take it off, and put it on again. In that way we apply cold not only to the mastoid but to the points in front and under the ear which control the blood supply to the middle ear. In that way I have seen very acute earache controlled in thirty minutes, with no return. I think the heat furnishes a number of cases that Dr. Welty otherwise would not get, and the Leiter coil has saved the specialist many a piece of work.

Dr. A. C. Rogers, Los Angeles: Leave off the cold, simply use the Politzer bag and nine times out of ten your earache will disappear and not return.

Dr. Fred Baker, San Diego: I want to emphasize one or two points. We have had the question of radical operation for adenoids mentioned by Dr. Rogers and I fully concur in what he said, but he speaks of the curettes and their inefficiency. I think it has been the experience of every one who operates that the use of the curette is unsatisfactory if the operation terminates at that point. I thoroughly be-

lieve the best instrument for operation on adenoids is the finger nail. Of course, it must be rendered as aseptic as possible, but I do not believe any operation is satisfactorily done unless you examine with the finger to see what is done, and I do not believe the Gottstein curette or anything else will clean out the cavity so that the adenoid will not return. I am of the opinion—I do not think my experience is wide enough to state it positively—that in the removal of adenoids a second operation is necessary only where adenoids are left after operation. I believe if you go in with the finger nail and clean out the cavity as well as you can you will have few cases of recurrence of the adenoids. In this connection I wish to call attention to a method of procedure I have never seen mentioned or noted before. It is original as far as my own experience is concerned. On one occasion in cleaning the finger nail I pared down the inner surface until I had produced a chisel edge, and I was surprised at the facility with which I could remove the tissue; I am tempted to try the complete operation in this way. I want to protest against the removal of the tonsils and adenoids in the same operation. I have seen it done a number of times and I have done it myself twice. In both of these instances, owing to the fact that the hemorrhage is considerable, and it is impossible to continue the anesthetic, I did an imperfect operation. I believe the removal of the adenoids is the most important and the tonsils can be removed afterward. The operation should be divided and the tonsils removed either before or afterwards. Take plenty of time and use general anesthesia every time, if it is possible, and you will generally prevent all recurrences. Just a word more. I think Dr. Welty, by an inadvertence, made a mistake in his statement, or rather, he was not full enough. I am a believer in both cold and hot applications, and as Dr. Hare said, alternation is a most excellent procedure. I alternate them, but believe both are beneficial. But the point I wish to make is that in putting on the application hot he does not say anything about keeping it hot, except to mention that by the external application of something the dressing can be kept hot. I think if we put on a wet dressing it is imperative that it should be kept hot. We know that if we macerate the tissues with a warm application we have applied a poultice, and we know that bacteria grow under a poultice more than under any other condition, and if we are going to put a poultice on we had better not. I was told in the beginning that we should not poultice an eye or an ear, and I think probably it was an inadvertence on the part of Dr. Welty. I believe such treatment would result in damage.

Dr. E. C. Sewall, San Francisco: In speaking of the removal of tonsils and adenoids as a prophylactic measure in ear trouble, I wish to say a word in regard to using an anesthetic especially in removing the tonsils. It is my point of view that when we remove the tonsils we must remove them in their entirety; that is to say, the tonsil must first be entirely cleared from the pillars anteriorly and posteriorly, and then from the superior constrictor, and removed, preferably, by the cold snare. It has become the custom of late years in the removal of tonsils, especially in children, to send them to the hospital, administer a general anesthetic and remove the tonsils, and at the same time, I believe, the adenoids. I wish to insist that the tonsils must be removed in their entirety, but I believe it is possible in the great majority of cases to remove the tonsils, in children even, under the use of a local anesthetic. I began some months ago because of the great objection to using a general anesthetic, even ether, in children who have throats filled up with tonsils and adenoids. We have all had the experience where children have become cyanotic, and have come very near death, we might say, from the use of a general anesthetic. For that reason I began first injecting cocaine directly by the use of a hypodermic syringe into the tonsils. After using that a short time I changed it to eucaine, and have since used a solution of half per cent strength, and one per cent in removing one tonsil. Since using this I have removed them in sixty cases in the last five months, the ages running from five years to adults. In some five-year-old children only one tonsil was removed at a time, and they returned after a few weeks to have the other one removed, which shows that the pain was not great.

Dr. Wright, Altadena: I wish to report one case that bears on the point as to whether a mastoid case operated soon enough will ever die. I know of one case operated within thirty-six hours in which a thrombus of the jugular vein was found, followed by a leptomengitis in six hours after the first symptoms came on.

A Member: You didn't operate early enough.

Dr. Wright: Well, how early should we operate? That is what I want to find out.

A Member: Before the thrombus forms. (Laughter.)

Dr. F. D. Bullard, Los Angeles: From my personal experience the best way is to pass the eustachian catheter. Having twice had otitis media my colleague, Ellis, inflated the ear and all the symptoms disappeared, and I urge your attention to early inflation.

A Member: Do you apply that to children?

Dr. F. D. Bullard: I don't know that you could apply the catheter, but Politzerization would be possible. Another thing is to urge upon the general practitioners to send their children to the specialist to have their adenoids taken care of. Not long since a physician in Los Angeles sent his child to me for an error in refraction, and I called his attention to the fact that the child had adenoids. He had not recognized it, although he is a competent physician. Now I believe we should go around and have the doctors all in and lined up first.

Dr. Geo. A. Hare, Fresno: I wish simply to ask as to the relative danger of the use of the Politzer bag in acute earache—if that is a routine practice in the treatment of children with earache? I should like to hear from those advocating it.

Dr. William Simpson, San Jose: I would like to say in regard to the use of the Politzer bag that I have been using it for twenty-five years and I have never seen any trouble from it. In many cases I think it is the very first thing to do. But there is just one point I would like to make in that connection, and that is that we are making a tremendous mistake in discussing these questions among ourselves as specialists; that to do good this discussion ought to take place when the general practitioner is present, for I am sure there is not a man in this room but knows that a campaign of education ought to be conducted on this line for the benefit of the general practitioner. The difficulty comes from the fact that they hang on to these cases just as long as possible, and send them to us so late that it is almost impossible for us to do a bit of good. I heard a lot here this morning as to a campaign of education on the milk question, and on various other questions; if there is any question on which a campaign of education should be conducted, it is "that the general practitioner does not know everything about eyes and ears." But until we get to that point you might just as well take your chance, and when they come to you do the best you can.

Chairman Roberts: I will say in reply that this is supposed to be a meeting for the general practitioner and not for the specialists.

Dr. William Simpson: I am glad if some of them heard what I have said.

Dr. R. L. Doig, San Diego: Doctor, the remarks

you have just made make unnecessary much of what I wished to say. Watching the work of specialists for the past ten years, the results have been so impressive, so astonishingly beneficial in many cases, that I am anxious the general practitioner should be educated as to its importance. During the first fifteen years of my practice I was practically ignorant of this work and its results. Two years ago I presented a paper at Riverside from the standpoint of the general practitioner. Very much to my disappointment I read it before a lot of specialists who knew more about it than I. That was not what I wanted to do, and the effect of the paper was lost. Another thing I would urge, and that is the directing of the attention of the dentists to this matter. In that paper I said that one of the best papers I had heard was a dental paper, in my town, on this subject, but I have reason to feel that dentists in general do not appreciate it. Just the other day a little girl, probably fourteen years of age, moved into a house adjoining mine. She is one of those rather pretty girls, spoiled by prominent front teeth. She has a pretty voice and would sing well if she had proper respiration. I called the attention of her mother to these prominent teeth, and she said, "Yes, it is a case where she sucked her thumbs, and the dentist said, as long as she did, he could not do anything for it." I called her attention to the fact that it was because she could not breath through her nose. She said she had never heard of adenoids and the dentist assured her that the trouble all come from the child sucking her thumb.

Dr. F. L. Rogers, Long Beach: Inasmuch as this is a general practitioner's, as well as a specialist's meeting, I feel that the remarks of Dr. Simpson should be commented upon, particularly in reference to the use of the Politzer bag in acute otitis media. I do not believe this section wants to go on record as favoring indiscriminate, or even routine Politzerization for this condition. The doctor stated, whether as a matter of inadvertance or not, that the first thing that should be done in a case of acute otitis media is the use of the Politzer bag.

Dr. William Simpson: I did not say in every case; I said often it was the first thing to be done.

Dr. F. L. Rogers: I can not agree with the statement even with that qualification, for in my opinion, the first thing indicated in acute otitis media is to cleanse, and as far as possible to sterilize the naso-pharynx as well as the external auditory canal, with hot saline antiseptic solutions. This in itself depletes the tissues and relieves the tension. and may be sufficient to permit the entrance of air by natural means. If this fails then use a Politzer bag early, but with extreme caution. I thoroughly agree with the gentleman who said that the use of the eustachian catheter, even in children, is the most satisfactory way to inflate the middle ear. Only yesterday I used it for a child four and a half years old. A small amount of one per cent cocaine solution was used first and the child made but little complaint, and the results were very satisfactory, both as to pain relief and improvement in hearing.

Dr. William Barclay Stephens, San Francisco: With reference to the use of the Politzer bag, which really comes within the province of my paper, I believe I stated there that I sometimes use it in acute cases which are simply the result of acute congestion of the throat and without infection, having previously cleansed the throat. I should like to say in conjunction with my own paper that I do not want to leave a wrong impression as to employing only a simple puncture of the membrana tympani. It is only in those cases of acute congestion. In other cases where there is pus, or sero-pus, or where we suspect there is any infection, I believe in thorough incision of the membrana about the posterior inferior third. Then where the attic is involved and we suspect there is involvement of the antrum I use a Graeffe knife, extending up into the attic wall, and if tender over the mastoid I cut out through the canal, making a modified Weil's incision.

Dr. Cullen F. Welty, San Francisco: Dr. Stevens recommended a puncture of the drum membrane which I wish to criticize very much. The only condition in which a puncture should be done is in myringitis. Otherwise always a free incision of the drum membrane and not extending into the canal, because you open a field that may produce perichrondritis; I know of such a case. I believe that all cases of acute purulent otitis media not dependent upon infectious diseases should have their tonsils and adenoids, particularly their adenoids, removed at once, as they are the predisposing factor in so many cases, and if not removed the ear may continue to discharge indefinitely, or the hearing be more or less seriously impaired. No doubt all of you have seen such cases. If there ever was an indication for removal of the tonsils and adenoids, this should be considered one of greatest importance. Over treatment of the naso-pharynx in acute infectious diseases I believe is responsible for many cases of purulent otitis media. I should not recommend more than two or three treatments per day, and of the mildest form that can be applied. I sometimes doubt the advisability of any interference. When the tonsils are seriously infected it may do some good. Politzerization in acute otitis media is the thing par excellence. Politzerization in acute purulent otitis media does not do any good, nor does it any harm. Many ear men have contended that the pus was blown into the mastoid cells. If you only recall pathology you will remember that the tympanic cavity and mastoid cells are infected primarily in this disease. Some recommend Politzerization two or three days following a free incision of the drum membrane, in order to forcibly blow some of the pus from the tube and tympanic cavity. In this condition it is also stated that a mastoiditis may be produced, which is entirely wrong, as I have stated before. I do not believe Politzerization does much good at all, because the tube enters about the center of the cavity, and that pus below the center will remain. The question of a bandage in acute otitis media has not been spoken of; I wish to recommend it, and insist that you are not doing your best when you allow your patients to go without it. As a physician or surgeon, would you allow your patient to go about with an inflamed part without protecting the same? And I say a piece of cotton put into the ear is not sufficient protection. The only criticism I have to make on Dr. Hastings' paper is that it is not sufficiently complete. The question of heat and cold in acute purulent otitis media has been discussed for the last ten years by ear surgeons, and when I say that most of them have discarded the cold in preference to the heat you must accept it as such. I remember very well a case of acute otitis media that terminated fatally, was treated by the Leiter coil with ice water. This made such an impression on me that I will never forget it. The symptoms were so masked by the use of the coil that another case was sacrificed to science. I believe in hot applications because they have served me well. As I have said in my paper, after a free incision of the drum membrane, put on a hot solution, and if your patient is not improved in twenty-four hours the most conservative procedure is that of operation. In connection with the use of heat, Dr. Thomas says I will increase my cases for operation. This has not been so, as I have had but two cases of acute purulent otitis media that I have seen from the acute condition to increase in severity and demand operation. I most heartily recommend hot applications, and will say, if you use it in ten cases as I have advised, I am confident you will never use cold again. Dr.

Pischel takes exception to my statement, "that a competent man can only do good in mastoid surgery." I will answer this by saying that I have never seen the facial nerve cut. I have seen the dura uncovered and punctured, if you please, the sinus uncovered and accidently opened, but I have never seen a serious complication nor a complication of anv kind, as the direct result of the operation. I have seen acute cases of mastoiditis die because they have not been operated upon early enough, but from no other reason. The deaths that come from anesthesia have nothing to do with the operation at all. That is entirely foreign to the subject. In a two years' service in the Politzer Clinic, there were about forty-five deaths. The lesions were always found to be in the brain or its membranes and from delayed operation in either the acute or the chronic condition. One gentleman spoke of a fatal case on the third day from cerebral complications. This again illustrates the very points that I have tried to emphasize. I am confident that had this case been examined carefully, and conditions looked for that I have spoken of, the case would not have been sacrificed.

PLAGUE.

Being a translation of the Fourth Chapter of "La Pathologie Exotique," by Professor A. Le Dantec of the Faculty of Medicine, Bordeaux.

Translated for the State Journal by Dr. W. C. RUCKER, P. A. Surgeon, U. S. P. H. and M. H. S.

(Note.—In sending the manuscript, Dr. Rucker writes as follows: "I am sending you herewith a translation of the fourth chapter of Le Dantec's 'La Pathologie Exotique.' This is not a finished production inasmuch as it is the product of the few moments of recreation which have been allowed me in the past few months. It contains so much of interest, especially to the physicians of California, and is in such agreeable style that it seems to merit publication in your journal." It is indeed a most valuable contribution to the subject of plague and therefore no apology is made for its length; it should be carefully studied by every physician in this state. Ed.)

Synonyms: Bubonic plague; peste a bubons; typhus of the Orient; levantine fever; pest; in Chinese Yang-tse or lao-chow-ping (disease of rats).

From the bacteriological viewpoint, plague should be considered as a true septicaemia caused by a specific cocco-bacillus. From the clinical viewpoint, it is a febrile disease characterized by a most pronounced typhoid state and by the development of buboes, carbuncles and petechiae.

History.

1. The Plagues of the Ancients. The ancients called all the diseases, which affected them in epidemics and caused a considerable mortality, plague. The disease, which raged at Athens in 430 and which is known in history by the name of "the plague of Athens," was not true plague. It is the same as the plague of Antonin, which ravaged Europe and Asia at the time of Marcus Aurelius (166 B. C.), and of the plague of Carthage which attacked Egypt, the coast of Africa, Italy and Greece from 255 to 265 and which has been so well described by St. Cyprien. These three epidemics or plagues called by the ancient word seem to have all been the same affection, which, according to Littré, seems to have disappeared from the surface of the globe as its symptoms are not like any other disease which exists to-day.

2. The True Plague of the Ancients. The true plague seems to have been known in Egypt before the Christian era. A manuscript of Oribase, dating from 200 to 300 years before Christ, speaks of a disease characterized by a violent fever, pains, and an eruption of large, hard buboes.

3. The Plague from the Christian Era to Our Days. The first epidemic of plague which has been registered in an authentic manner is known under the name, "Plague of Justinian" (542). It has been described by Evagrius and Procape. Starting at Péluse, on the delta of the Nile, one flank of it penetrated Persia while the other ravaged all the seaboard of the Mediterranean.

The greatest epidemic which has been let loose upon humanity is the plague known in history as the black pest. It left China about 1334, and marching from East to West it invaded successively, India, Persia, Russia, Germany, France, Italy, Spain, and finally England and Norway (1347-1351). This epidemic carried off twenty-five millions of the inhabitants of Europe, which at that time amounted to one hundred and five millions. Pope Clement VI, who made a vast inquiry into the ravages caused by the scourge, fixed the figures of the deaths caused in the entire world at 42,836,486. Also what a profound impression this epidemic left on all the writings of the period. They accused the Jews of having poisoned the wells, using therefor a mixture composed of spider webs, the blood of the buboes and animal poisons. This accusation served for a pretext for those terrible persecutions, which cost the lives of thousands of the Israelites. This plague of the fourteenth century was the beginning of the rule of quarantine. The disease perpetuated itself in an endemic state in Europe up to the sixteenth century, when it yielded its place to typhus and typhoid fever, it being thought that it divided itself to create these two diseases (Nully).

During the seventeenth century one notes first, the plague of Marseilles (1720); the plague of Messina (1743), and finally the plague of Moscow (1770).

The plague of Marseilles has remained celebrated in history because of the self-sacrifice which was displayed by Bishop Bulzunce during the time of the epidemic.

At the end of the eighteenth century and the beginning of the nineteenth, Egypt was a permanent focus of plague. From 1783 to 1844, twenty-one epidemics occurred. Of these we are more interested, from a historic point of view, in the epidemic of 1799, which caused the death of two thousand men of the French army in Egypt and Syria at the siege of St. Jean d'Acre (Desgenettes). This succession of epidemics in Egypt made it believed that this country was the original focus of the disease, and the search for the explanation brought forth many theories, the most seductive of which were the theories of the three deltas and the theory of Pariset.

The theory of the three deltas gives for a focus of origin of each pestilential disease, the delta of a great river.

1. The delta of the Nile (plague);
2. The delta of the Ganges (cholera);
3. The delta of the Mississippi (yellow fever).

The theory of Pariset blames the existence of plague in Egypt to the changes which have been produced by the civilization of that country. During all the period of antiquity in which the Egyptians embalmed or salted their cadavers to preserve them, there occurred no epidemic of plague but when these practices were abandoned it raged.

Reckoning from 1850, it seemed that plague was going to be relegated to the domain of history, but in 1878-1879 the epidemic of Wetlianka knocked at the doors of Russia. But this is not what makes one alert, it is by way of the sea that plague penetrates Europe.

The endemic focus of Yunnam awoke sharply in